

SONY®

White paper

September 2014

Xperia™ Z3

L55u

Note: Screen images are simulated.

Purpose of this document

Sony product White papers are intended to give an overview of a product and provide details in relevant areas of technology.

Document history

Version		
September 2014	First released version	Version 1

Sony Mobile Developer World

For the latest technical documentation and development tools, go to www.sonymobile.com/developer.

This White paper is published by:

Sony Mobile Communications Inc.,
1-8-15 Konan, Minato-ku, Tokyo 108-0075, Japan

www.sonymobile.com

© Sony Mobile Communications Inc., 2009-2014.
All rights reserved. You are hereby granted a
license to download and/or print a copy of this
document.
Any rights not expressly granted herein are
reserved.

First released version (September 2014)
Publication number: 1002-0052.1

This document is published by Sony Mobile
Communications Inc., without any warranty*.
Improvements and changes to this text
necessitated by typographical errors,
inaccuracies of current information or
improvements to programs and/or equipment
may be made by Sony Mobile Communications
Inc. at any time and without notice. Such
changes will, however, be incorporated into new
editions of this document. Printed versions are to
be regarded as temporary reference copies only.

*All implied warranties, including without
limitation the implied warranties of
merchantability or fitness for a particular
purpose, are excluded. In no event shall Sony or
its licensors be liable for incidental or
consequential damages of any nature, including
but not limited to lost profits or commercial loss,
arising out of the use of the information in this
document.

Table of contents

Product overview	2
Xperia™ Z3	2
Facts – dimensions, weight, performance and networks	4
Categorised feature list	7
Technologies in detail	10
Device-to-device communications (local)	10
ANT+™ wireless technology	10
Bluetooth® wireless technology	11
Wi-Fi®	12
DLNA Certified® (Digital Living Network Alliance)	13
Messaging	14
MMS (Multimedia Messaging Service)	14
Email	14
Positioning – location based services	15
Provisioning (OMA CP)	15
Multimedia (audio, image and video)	16
Synchronisation (OMA DS, EAS)	18
Trademarks and acknowledgements	19

Product overview

Xperia™ Z3

- 20.7 MP camera with 4K video: high quality images & videos
- High dust tight and water resistance rating – IP65 and IP68
- Long-lasting battery
- Ultra fast performance: Snapdragon 801 Quad-Core 2.5 Ghz processor and 3 GB of RAM

Only the best

The Xperia™ Z3 blends design and engineering craftsmanship to deliver beauty. It's super-slim rounded aluminium frame, uniquely designed power button and durable tempered glass panels, give it an elegantly premium finish. Plus, with an easy-to-use interface and symmetrical design, it feels right at home in your hand.

With market leading waterproofing, you can take pictures in the rain or in the pool, even with an open headphone jack – so dive to new depths and capture every single moment, in detail.

The Xperia™ Z3's Snapdragon 801 processor offers speeds up to 2.5 Ghz for lightning-fast web-browsing, super-fluid interactions and impressive multi-tasking, all while maintaining optimum battery power. So whether you want to listen to your favourite albums online, download important documents, or lose yourself in the latest movies, the Xperia™ Z3 pushes the capabilities of power to give you an impressive battery life.

All the latest camera technology from Sony

The Xperia™ Z3 features a unique combination of Sony Cyber-shot™ and Handycam® technologies to help you capture the moments that matter most, in the highest quality. Good is capturing the moment. Great is enhancing it with low-light capability and ISO 12800 sensitivity in a smartphone.

The Xperia™ Z3's 2.3-inch ExmorRS™ for mobile sensor and BIONZ™ for mobile processing engine work together to capture every striking detail – for photos and videos with less noise, better exposure and vivid colours, even in lowlight. And you can fit even more into every shot with the new 25 mm wide-angle Sony G Lens, so you never miss out on all the action.

You can pause and resume filming, in super-clear 4K resolution. Plus, Sony's new and improved SteadyShot™ technology helps you shoot videos that are seamlessly smooth and stable.

Unrivalled entertainment

Sony is continuously developing the best sound technology for crystal clear listening and astounding acoustic performance.

Good is having all your music in one place. Great is making your favourite tunes sound even better. Our digital amp technology, uniquely developed for High-Res audio, reduces distortion and noise at wider frequency ranges, to reproduce high frequency sound in amazing detail. Plus, you can immerse yourself in superior audio and upscale your low-resolution music to enjoy it in better quality with DSEE HX. And with Sony's Digital Noise Cancelling technology, exterior noise can be reduced when paired with a DNC headset.

Sony's online services make finding your next favourite album easy. Choose from our vast library of millions of songs with Music Unlimited and lose yourself in the soundtrack to your life.

From breathtaking colour, to pixel-perfect resolution, Sony knows it's the details that make the difference. Whether you watch the latest movies, browse the web or view pictures on the go, Sony's TRILUMINOS™ Display technology, X-Reality™ for mobile and ultra-bright displays mean you are guaranteed the best picture quality, wherever you are.

Facts – dimensions, weight, performance and networks

Operating system	Google™ Android™ 4.4.4 (KitKat)
Processor	2.5 GHz Qualcomm Snapdragon 801 MSM8974AC Quad Core
GPU	Adreno 330
Size	146 x 72 x 7.3 mm
Weight	152 grams
Available colours	Black, White, Copper
SIM card	nano SIM
Main screen	
Colours	16,777,216 colour TFT
Resolution	Full HD 1920x1080 pixels
Size (diagonal)	5.2 inches
Input mechanisms	
Text input	On-screen QWERTY keyboard
Touch screen	Capacitive
Touch gesture	Yes – multi-touch, up to 10 fingers supported
Memory	
RAM	3 GB
Flash memory	Up to 16 GB*
Expansion slot	microSD™ card, up to 128 GB (SDXC supported)
Camera	
Camera resolution	20.7 MP
Digital zoom	8x
Clear image zoom	3x
Photo light	Yes – Pulsed LED
Video recording	Yes – 4K
Front Camera	Yes – HD 1080p for video chat and 2.2 MP for camera capture
ISO	ISO 3200 maximum in manual mode
	ISO 12800 maximum in Low Light mode for photo
	ISO 2000 maximum in Night scene mode for video
Minimum focus distance	120 mm

Sensors	
Accelerometer	Yes
Ambient light sensor	Yes
Barometer sensor	Yes
Game rotation vector	Yes
Geomagnetic rotation vector	Yes
Gyroscope	Yes
Magnetometer	Yes
Step counter	Yes
Step detector	Yes
Significant motion detector	Yes
Proximity sensor	Yes
Networks	
L55u	TD-LTE Band 41 (China Unicom), Band 40 (roaming only) FDD-LTE Band 3 (China Unicom), Band 1 (roaming only) UMTS HSPA+ Bands 1, 2, 5, 8 GSM GPRS/EDGE 850, 900, 1800, 1900 MHz
Data transfer speeds	
GSM GPRS	Up to 107 kbps
GSM EDGE	Up to 296 kbps
HSUPA (upload)	Cat 6, up to 5.8 Mbps
HSDPA (download)	Cat 24, up to 42 Mbps
TD-LTE (upload)	Cat 4, up to 50 Mbps
TD-LTE (download)	Cat 4, up to 150 Mbps
Talk time (GSM)	Up to 14 hours**
Standby time (GSM+GSM)	Up to 510 hours**
Standby time (GSM+UMTS)	Up to 480 hours**
Standby time (GSM+LTE)	Up to 540 hours**
Talk time (UMTS)	Up to 16 hours**
Music listening time	Up to 130 hours**
Video playback time	Up to 10 hours**
Battery (Embedded)	3100 mAh minimum




** Memory comprises approximately 2.8 GB of firmware, plus 11.8 GB of “Internal storage” for music, pictures and movies, and downloaded applications and their data.*




*** Values are according to GSM Association Battery Life Measurement Technique as performed in controlled laboratory conditions. Actual time may vary.*

NOTE: The battery performance may vary depending on network conditions and configurations, and device usage.

NOTE: The performance metrics are all measured under laboratory conditions.

Categorised feature list

 <p>Camera</p> <p>20.7 MP camera with Sony Exmor RS™ for mobile image sensor 8x digital zoom AR Effect AR Fun Auto focus Background Defocus Burst mode Creative effects HDR for photos and movies Face detection Face in Flash/Pulsed LED Flash/Photo light Front-facing camera (2.2 MP 1080p) with Sony Exmor R™ for mobile image sensor Geotagging Image stabiliser Multi camera Object tracking Picture Effect Quick Launch Red-eye reduction Scene recognition Self-timer Send to web Sequential video recording Smile Shutter™ Sound Photo SteadyShot™ Superior Auto Sweep Panorama Timeshift burst Timeshift video Touch capture Touch focus Video recording (4K) White balance</p>	 <p>Music</p> <p>3D Surround Sound (VPT) Album art Bluetooth® stereo (aptX®, A2DP) ClearAudio+ Clear Bass™ Clear Phase™ DSEE HX*** Dynamic normaliser High-Res audio (LPCM, FLAC, ALAC, DSD) Low power audio playback*** Music tones (MP3/AAC) S-Force Front surround Stereo speakers TrackID™ music recognition* Walkman® application xLoud™ Experience</p>	 <p>Internet</p> <p>Baidu search Baidu for Sony Baidu cloud album Bookmarks Info-eye™* Pan & zoom Sony Select Web browser (WebKit™)* What's new</p>
--	---	---

 <p>Communication</p> <ul style="list-style-type: none"> Call list Noise suppression Polyphonic ringtones Sina Weibo Slow talk* Smart call Speakerphone Talk equaliser Voice enhancement Xperia™ Socialife* 	 <p>Messaging</p> <ul style="list-style-type: none"> Conversations Email Fetion* Handwriting recognition Instant messaging Multimedia messaging (MMS) Predictive text input Sound recorder Text messaging (SMS) 	 <p>Design/Other features</p> <ul style="list-style-type: none"> Auto rotation Battery STAMINA mode Bluetooth® unlock Direct touch Face Unlock Gesture input IPX5 and IPX8 (waterproof)** IP6X (Dust tight) Live Color LED On-screen QWERTY keyboard Screenshot capturing Screen video recording Small Apps Smart backlight control Smart screen rotation Super-vivid mode Throw Xperia™ Home X-Reality™ for mobile Touch screen TRILUMINOS™ Display for mobile Voice input Wallpaper
---	--	--



Entertainment

3D games
Lifelog
Media browser
Motion gaming
Movie creator
PlayMemories
Radio (FM radio with RDS)*
Reader mode*
SensMe™ slideshow
TV launcher
Video streaming



Organiser

Airplane mode
Alarm clock
Calculator
Calendar
Contacts
Document readers/editors
eCompass™
Setup guide
Sketch
Stopwatch
Timer



Connectivity

3.5 mm audio jack Digital Noise Cancelling (DNC)
ANT+™ sport, fitness, health support
aGPS*
BeiDou
Bluetooth® 4.0 wireless technology
Cast screen
Charging Dock Connector
DLNA Certified®
GLONASS
HDCP
High-Res Audio via 3.5 mm audio jack and USB
MHL 3.0 support + 5-pin support
Media Go™
Media Transfer Protocol support
Micro USB support
MirrorLink
Native USB tethering
NFC
PC Companion
Screen mirroring
Smart Connect
Synchronisation via SyncML™
Synchronisation via Exchange
ActiveSync®
USB charging
USB High speed 2.0 support
USB Host
Xperia Link™
Wi-Fi®
Wi-Fi® Hotspot functionality
Wi-Fi CERTIFIED Miracast™

* This service is not available in all markets.

** In compliance with IP65 and IP68, this smartphone is protected against the ingress of dust and is waterproof. Provided that all ports and covers are firmly closed, the phone is (i) protected against low pressure jets of water from all practicable directions in compliance with IP65; and/or (ii) can be kept under 1.50 metres of freshwater for up to 30 minutes in compliance with IP68. Find out more at www.sonymobile.com/testresults.

*** This feature is only available when you play music using the Walkman® application.

Technologies in detail

NOTE: The information outlined below is general and levels of compliance to standards and specifications may vary between products and markets. For more information, contact Sony Mobile Developer World or your Sony contact person where applicable.

Device-to-device communications (local)

ANT+™ wireless technology

Connectable devices	ANT+™ devices require the download of a supporting application
Frequency band	2.4 GHz
Data transfer rate	Up to 60 Kbps
Encryption	AES-128
Topologies	One to Many, Many to One, Peer to Peer, Star, Practical Mesh

Bluetooth® wireless technology

Bluetooth® profiles supported	Advanced Audio Distribution Profile v1.2 Audio/Video Remote Control Profile v1.3 Device Identification Profile v1.3 Generic Attribute Profile Client/Server over LE Handsfree Profile v1.6 (Wide band speech) Headset Profile v1.2 Health Device Profile v1.1 HID over GATT Profile v1.0 Human Interface Device Profile, Host role v1.1 Messaging Access Profile v1.0 Object Push Profile v1.1 Personal Area Networking Profile v1.0 Phonebook Access Profile v1.1 Serial Port Profile v1.1
Core version and supported core features	Version 4.0 Bluetooth Low Energy
Other supported features	aptX® CD quality audio streaming over Bluetooth® connection
Connectable devices	Products that support at least one of the Bluetooth® profiles listed above. Bluetooth® 4.0 accessories generally require the installation of a supporting application.

More information:

www.sonymobile.com/developer

www.bluetooth.com

Wi-Fi®

Supported standards	IEEE 802.11a/b/g/n/ac and Wi-Fi® Wi-Fi Direct™, Wi-Fi Protected Setup, Wi-Fi CERTIFIED Passpoint™, Wi-Fi CERTIFIED Miracast™
Connectable devices	Wi-Fi® access points Wi-Fi Direct™ compatible devices
Frequency band	2.4 GHz/5 GHz
Data transfer rate	Up to 433 Mbit/s
Security	Open Authentication Shared Authentication EAP-SIM EAP-AKA EAP-TLS EAP-TTLS/MSCHAPv2 PEAPv0/EAP-MSCHAPv2 PEAPv1/EAP-GTC WPA Personal and WPA2 Personal WPA Enterprise and WPA2 Enterprise
Encryption	WEP 64 bit, WEP 128 bit, TKIP and CCMP (AES)
Power save	WMM-UAPSD
QoS	WMM

DLNA Certified® (Digital Living Network Alliance)

Supported Device Classes	<p>M-DMS – Mobile Digital Media Server Media Types: image, music and video Summary: The digital media server exposes the media files in your device to a Wi-Fi® network. The files can then be accessed from other DLNA Certified® clients.</p> <p>M-DMP – Mobile Digital Media Player Media Types: image, video and music Summary: Play content stored on another device, for example, a server or a PC, directly on your device.</p> <p>M-DMC – Mobile Digital Media Controller Media Types: image, video and music Summary: A remote controller that locates media files and plays them on your device.</p> <p>+PU+ Media Types: image, video and music Summary: Play media in your device on another device, such as a TV or a PC using 2 box push technology. +PU+ is integrated in the Album, Movies and Walkman® applications.</p> <p>+DN+ Media Types: image, video and music Summary: Download content stored on another device, for example, a server or a PC, and play the downloaded content directly on your device.</p> <p>+UDO+ Media Types: image, video and music Summary: The digital media server also has the capability to get uploaded files from other DLNA Certified® clients.</p>
Supported Bearers	<p>Wi-Fi® Wi-Fi Direct™</p>
DRM Support	<p>The DLNA Certified® implementation does not support DRM-protected content.</p>

Messaging

MMS (Multimedia Messaging Service)

According to OMA Multimedia Messaging Service v1.0 + SMIL

Email

Bearer type (IP)	GPRS, EGPRS, UMTS, LTE, Wi-Fi®
Character sets	BIG5 Traditional Chinese GB18030 ISO-2022-JP Japanese ISO-8859-1 ISO-8859-2 Eastern Europe ISO-8859-5 Cyrillic ISO-8859-7 Greek ISO-8859-9 Turkish ISO 8859-11 KOI8-R Cyrillic Shift_JIS Japanese US-ASCII UTF-16 UTF-8 Windows® 874 Windows® 1251 Cyrillic Windows® 1252 Windows® 1254 Turkish Windows® 1258 Vietnamese
Protocols	POP3 and IMAP4
Push email	Microsoft® Exchange ActiveSync® (EAS) IMAP4 IDLE (RFC2177)
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and STARTTLS
HTML mail	Yes (read only)

More information:

www.sonymobile.com/developer

www.openmobilealliance.org

Positioning – location based services

Supported standards:

- OMA Secure User Plane Location (SUPL) v1.0 and v2.0
- 3GPP™ Control Plane location (incl. Emergency location)
- Qualcomm® GPSOneXtra™

Supported satellite systems:

- GPS
- GLONASS
- BeiDou

NOTE: GPS, GLONASS and BeiDou are used together to calculate the position. Positioning is available at more locations and more *accurate if all three systems are used. The benefits of using GLONASS and BeiDou are automatically available for all applications using the positioning APIs.*

Provisioning (OMA CP)

OMA CP version 1.1

Multimedia (audio, image and video)

Audio Playback	Decoder format	Supported in file format
	AAC (AAC-LC, AAC+, eAAC+, AAC-ELD)	3GPP (.3gp, 3gpp), MP4 (.mp4, .m4a), ADTS (.aac)
	ALAC	MP4 (.m4a)
	AMR-NB, AMR-WB	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4a), AMR (.amr, .awb)
	DSD	DSF (.dsf), DSDIFF (.dff)
	FLAC	FLAC (.flac), Matroska (.mka)
	MIDI	SMF (.mid), XMF (.xmf), Mobile XMF (.mxmf), OTA (.ota), RTTTL (.rtttl), RTX (.rtx), iMelody (.imy)
	MP3	MP3 (.mp3)
	PCM	WAV (.wav)
	Vorbis	OGG (.ogg), Matroska (.mkv)
	WMA	ASF (.wma)
Audio Recording	Encoder format	Supported in file format
	AAC (AAC-LC, AAC+, AAC-ELD)	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4a)
	AMR (AMR-NB, AMR-WB)	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4a), AMR (.amr)
Image Playback	Decoder format	Supported in file format
	BMP	BMP (.bmp)
	GIF	GIF (.gif)
	JPEG	JPEG (.jpg, .jpeg)
	PNG	PNG (.png)
	WebP	WebP (.webp)
Image Capture	Encoder format	Supported in file format
	JPEG	JPEG (.jpg)

Video Playback	Decoder format	Supported in file format
	MPEG-4	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4v) Matroska (.mkv), AVI (.avi), Xvid (.xvid)
	H.263	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4v)
	H.264	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4v), Matroska (.mkv)
	H.265	MP4 (.mp4, .m4v)
	VP8	WebM (.webm), Matroska (.mkv)
	VP9	WebM (.webm)
Video Recording	Encoder format	Supported in file format
	MPEG-4	3GPP (.3gp), MP4 (.mp4)
	H.263	3GPP (.3gp), MP4 (.mp4)
	H.264	3GPP (.3gp), MP4 (.mp4)
Audio/Video Streaming	Streaming transport	HLS HTTP progressive streaming RTSP
DRM	DRM (Digital Rights Management) – features the rights and copy protection of downloaded content	OMA DRM v1.0 Marlin DRM Widevine Level 1 PlayReady DRM (available in specific regions)

NOTE: H.265 is not available in all markets.

Synchronisation (OMA DS, EAS)

OMA Data Synchronisation protocol versions 1.1.2 and 1.2

OMA Data Formats: vCard 2.1, vCalendar 1.0

Microsoft® Exchange ActiveSync® protocol version 2.5

Microsoft® Exchange ActiveSync® protocol version 12

Microsoft® Exchange ActiveSync® protocol version 12.1

Microsoft® Exchange ActiveSync® protocol version 14

Microsoft® Exchange ActiveSync® protocol version 14.1

Related information:

[*www.sonymobile.com/developer*](http://www.sonymobile.com/developer)

Trademarks and acknowledgements

All product and company names mentioned herein are the trademarks or registered trademarks of their respective owners. Any rights not expressly granted herein are reserved. All other trademarks are property of their respective owners.

Visit www.sonymobile.com for more information.